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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,488	02/09/2004	Sam Nemazie	SiliconStor-01US	1503

7590 03/14/2006

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EXAMINER

LEE, CHUN KUAN

ART UNIT PAPER NUMBER

2181

DATE MAILED: 03/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/775,488	Applicant(s) NEMAZIE, SAM	
	Examiner Chun-Kuan (Mike) Lee	Art Unit 2181	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 16-17 is objected to because of the following informalities:

In claim 16, line 2, it appears there is an extra "for", please delete; and

in claim 17, line 3, it appears -naximum- should be replace by "maximum".

Appropriate correction is required.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-16 and 19-32 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-30 of copending

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Application No. 10/775521 in view of "SATA vs. PATA: the reality of Serial and Parallel ATA - Serial ATA".

4. As per claims 1 and 20, reference copending application (claims 1 and 18 Application No. 10/775521) discloses almost all the functions and characteristics of the instant application. The difference between the two is the reference copending application recited the limitation "a third parallel ATA port" while the instant application recited the limitation "a third serial ATA port." By examining the "SATA vs. PATA: the reality of Serial and Parallel ATA - Serial ATA", it would have been obvious to consider the utilization of the serial ATA port in place of the parallel ATA port, because of advantages comprising hot-plug capability, decrease width and increased length of cables, increase bandwidth and enhanced integrity of connectivity ("SATA vs. PATA: the reality of Serial and Parallel ATA - Serial ATA", pages 1-2).

5. As per claims 2-16 and 19, reference copending application (claims 2-16 and 17 Application No. 10/775521) discloses all the functions and characteristics of the instant application.

6. As per claims 20-32, reference copending application (claims 18-30 Application No. 10/775521) discloses all the functions and characteristics of the instant application.

This is a provisional obviousness-type double patenting rejection

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 7-8 and 26-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It appears unclear regarding the accessing of the device by the first and the second host unit, because in claims 1 and 20, it appears the applicant recite that the arbitration and control circuit, utilizing a switch, select either first or second host to be coupled to the device for sending a command for execution thereof by the device, but in claims 7-8 and 26-27, the application appears to claim that both first and second host unit can concurrently accessing the device at the same time. Examiner will assume for the current examination that only one host unit is coupled to the device at anytime, as it is well known to one skilled in the art regarding how a switch functions under the configuration disclosed in the claims.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1, 6-14, 20-21 and 25-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Grieff et al. (US Patent 6,961,813).

9. As per claims 1 and 20, Grieff teaches a switch coupled between a plurality of host units and a device for communicating there between and comprising:

a) a first serial advanced technology attachment (ATA) port (Fig. 1, ref. 130) for connection to a first host unit (col. 3, ll. 13-24 and col. 5, l.17 to col. 7, l. 6);

b) a second serial ATA port (Fig. 1, ref. 132) for connection to a second host unit (col. 3, ll. 13-24 and col. 5, l.17 to col. 7, l. 6);

c) a third serial ATA port (device-side link layer on Fig. 1) for connection to a device (serial ATA device) (col. 3, ll. 13-24 and col. 5, l.17 to col. 7, l. 6); and

d) an arbitration and control circuit (arbiter module 112 and of Fig. 1) for selecting either the first host unit or the second host unit to be coupled to the device, through the switch, whenever either one of the first or second host units sends commands for execution thereof by the device,

wherein while one of the first or second host units is coupled to the device, through the switch, the other one of the first or second host units sends a command to the switch for execution by the device (col. 3, ll. 13-24 and col. 5, l. 17 to col. 7, l. 6).

10. As per claims 6 and 25, Grieff teaches the switch coupled between a plurality of host units and a device for communicating there between and comprising wherein said device is a storage unit (disk drive) (col 2, ll. 53-60).

11. As per claim 7-8 and 26-27, Grieff teaches the switch coupled between a plurality of host units and a device for communicating there between and comprising wherein the arbitration and control circuit enable the access of the device by one of the host unit (col. 3, ll. 13-24 and col. 5, l. 17 to col. 7, l. 6).

12. As per claims 9 and 28, Grieff teaches the switch coupled between a plurality of host units and a device for communicating there between and comprising wherein information, in the form of data, commands or setup, is transferred from the device to the first or second host units through the switch and the information is modified by the switch prior to being received by the first or second host units such that modified information rather than the information is received by the first or second host units (col. 12, l. 60 to col. 28).

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13. As per claim 10 and 30, Grieff teaches the switch comprising wherein the information is referred to as `identify drive response` (IDENTIFY DEVICE) (col. 7, ll. 39-61).

14. As per claims 11 and 29, Grieff teaches the switch coupled between a plurality of host units and a device for communicating there between and comprising wherein the information is referred to as `Tag` (col. 12, l. 60 to col. 14, l. 28).

15. As per claims 12 and 31, Grieff teaches the switch coupled between a plurality of host units and a device for communicating there between and comprising wherein information, in the form of data, commands or setup, is transferred from the first or second host units to the device through the switch and the information is modified by the switch prior to being received by the device such that modified information rather than the information is received by the device (col. 5, l. 65 to col. 6, l. 56 and col. 10, l. 27 to col. 11, l. 36).

16. As per claims 13 and 32, Grieff teaches the switch coupled between a plurality of host units and a device for communicating there between and comprising wherein the information is referred to as `Tag` (col. 5, l. 65 to col. 6, l. 56 and col. 10, l. 27 to col. 11, l. 36).

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17. As per claim 14, Grieff teaches the switch coupled between a plurality of host units and a device for communicating there between and comprising wherein the arbitration and control circuit include a Tag/Sactive Mapping Circuit (Command Tracker SM 114 of Fig. 1) for mapping a host tag to a device tag and inverse mapping for identifying a host (col. 5, l. 65 to col. 6, l. 56; col. 10, l. 27 to col. 11, l. 36 and col. 12, l. 60 to col. 14, l. 28).

18. As per claim 21, Grieff teaches the switch coupled between a plurality of host units and a device for communicating there between and comprising wherein the switch is a serial ATA switch (col. 3, l. 13 to col. 4, l. 4 and col. 5, l. 65 to col. 6, l. 56).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. Claims 2-5 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grieff et al. (US Patent 6,961,813) in view of Ng (US Patent 6,388,590).

Grieff teaches all the limitations of claims 1 and 20 as discussed above.

Grieff does not expressly teach the switch comprising wherein the ports include a task file, therefore operating as level 4 ports.

Ng teaches the coupling an ATAPI task file (Fig. 3, ref. 72b, 72a) to a serial transceiver port (Fig. 3, ref. 62a, 62b, 64a, 64b), therefore would operate as a level 4 port.

Therefore, it would have been obvious to one of ordinary skill in this art, at the time of invention was made to include Ng's task file into Grieff's switch ports. Doing so would further add and expand Grieff's switch to further comprising the first and second host task file and the device task file in the switch ports and by including the task files at the ports, the ports are able to operate at level 4, therefore enables operation of data transfer at faster rate (Ng, col. 2, ll. 27-50).

20. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grieff et al. (US Patent 6,961,813) in view of "Serial ATA Specification".

21. As per claims 15-16, Grieff teaches all the limitations of claim 1 as discussed above.

Grieff does not expressly teach the switch comprising wherein either the first or the second host sends a legacy queue command queued by the device; and wherein either the first or the second host sends a native queue command for execution thereof by the device.

"Serial ATA Specification" teaches the utilization of the legacy ATA queuing (legacy queue command) and the native Serial ATA queuing (native queue command) by the Serial ATA device (Section D.1.5 on page 301).

Therefore, it would have been obvious to one of ordinary skill in this art, at the time of invention was made to include Serial ATA Specification's queuing of legacy queuing command and the execution of the native queuing command into Grieff's storage device, because Grieff's storage device conforms to the Serial ATA standard, therefore enable backward compatibility to prior technology standard and improve performance by enabling multiple commands to be outstanding within the SATA device at the same time.

22. As per claims 17, Grieff and "Serial ATA Specification" teach all the limitations of claim 16 as discussed above, where Grieff further teaches the switch comprising wherein the Tag in the native queue command is modified prior to sending to the Device to avoid using the same Tag for both hosts and not to exceed the maximum allowed Tag value (Grieff, col. 5, l. 65 to col. 6, l. 56 and col. 10, l. 27 to col. 11, l. 36), wherein the maximum number tag is directly related to the free space available on the Outstanding Requests Table (OR_Table).

23. As per claims 18, Grieff and "Serial ATA Specification" teach all the limitations of claim 17 as discussed above, where Grieff further teaches the switch comprising wherein the Tag received in a FIS from Device is modified to its original value prior to sending to the Host (Grieff, col. 5, l. 65 to col. 6, l. 56; col. 10, l. 27 to col. 11, l. 36 and col. 12, l. 60 to col. 14, l. 28).

24. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grieff et al. (US Patent 6,961,813) in view of Shin et al. (US Pub 2002/0191603).

Grieff teaches all the limitations of claim 1 as discussed above, where Grieff further teaches the switch comprising a Data FIS FIFO (host FIS buffer 120 and device FIS buffer 122 of Fig. 1) and an associated FIFO Control (Command Tracker SM 114 of Fig. 1) are coupled to the first, second and third ports and are located externally thereto (Fig. 1 and col. 5, l. 65 to col. 6, l. 56).

Grieff does not expressly teach the switch comprising wherein the first, second and third ports are level 3 serial ATA ports.

Shin teaches the utilization of level 3 serial ATA ports (Fig. 38A and [0005]).

Therefore, it would have been obvious to one of ordinary skill in this art, at the time of invention was made to include Shin's level 3 serial ATA ports into Grieff's switch ports. Doing so would further add and expand Grieff's switch ports to further comprising wherein the first, second and third ports are level 3 serial ATA ports, therefore providing a communication architecture that provides high-performance for applications at a low cost (Shin, [0011]).


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chun-Kuan (Mike) Lee whose telephone number is (571)272-0671. The examiner can normally be reached on 8AM to 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim N. Huynh can be reached on (571)272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C.K.L.
03/03/2006



KIM HUYNH
SUPERVISORY PATENT EXAMINER
3/30/06